Morocco

Water Availability and Demand

Traditional Sources: 19.7 billion cubic meters (BCM) annually
- **Surface Water**: 15.7 BCM. Principal water source providing 80 percent of water supply.
- **Groundwater**: 4.0 BCM. Generally over-exploited leading to lower water tables and a deterioration in water quality.

Non-traditional sources: potentially 600 million cubic meters (MCM) from wastewater reuse.

Demand: Per capita available water resources are some 700 cubic meters per year for a population of 30 million. Annual per capita water availability is expected to drop to less than 400 cubic meters by 2020.

Agricultural irrigation is allocated 83 percent of withdrawn water leaving 17 percent for municipal, tourism and industrial uses.

Water Quality and Pollution Sources

The major water pollution sources are municipal wastewater discharge, industrial effluents and agricultural activities. The estimated volume of wastewater generated from urban areas is around 500 MCM per year. This is expected to reach 670 MCM in 2010 and 900 MCM in 2020. All wastewater is discharged untreated of which 30 percent is discharged directly into natural water bodies.

- The majority of underground water sources are of poor quality due to high salinity and nitrate concentrations.
- Several water streams have high concentrations of phosphorus, ammonia, organic matters and high coliform counts.
- The Sebou basin that constitutes 29 percent of Moroccan water resources is heavily polluted by untreated industrial and municipal discharge and agricultural drainage. Nitrates and phosphorus are present as well as pesticide residues.
- Most industries discharge untreated effluents and some 1.0 BCM is discharged annually into natural water bodies.

Government Strategies and Activities

Water quality is being considered within the national water sector reform strategy. A new strategy for integrated water management has been adopted. The new strategy is based on supply management, valorization and integration. It also addresses the need to use non-conventional water sources including the reuse of treated wastewater and desalinization. Action plans including a National Action Plan for Water Quality are under preparation.

Several institutions hold water quality management responsibilities. The Ministry of Equipment plays a key role in planning and managing projects, and implementing resource allocation. It is also in charge of protection and monitoring, and the enforcement of legislation. The Department of
Environment has the role of inter-ministerial coordination to initiate, promote and coordinate the protection of water resources; pollution abatement; and legislation enforcement. The Department of Environment is also responsible for environmental assessment studies and raising public awareness. The Ministry of Public Health is responsible for monitoring water quality and disseminating information to administrative authorities and the public.

**Legal and Regulatory Framework**

The existing legal framework is mainly governed by the Water Code “Le Code des Eaux” approved in 1995 by Law No. 10-95. This code includes several articles related to the protection and preservation of water resources, wastewater discharge, and the reuse of treated wastewater. The only available standards are those prepared by the National Office of Potable Water (ONEP). They include:

- NM 03-7-001 related to potable water quality
- NM 03-7-002 for the monitoring of water supply systems.

Under the Water Law or “Le Code des Eaux”, basin agencies will be created to evaluate, plan and manage water resources within their hydrographic catchments. They will also be responsible for water quality monitoring and enforcement.

**Recent Achievements**

The major on-going activity related to the water sector is the Management of Water Resources Project funded by the World Bank. The project will lead to the development of an action plan for water quality protection including a strategy for pollution control and a protection plan for water quality.

**Strategies for Improvement**

- Finalize and issue the decrees and standards related to the 1995 Water Law.
- Pass the pending environmental and EIA (environmental impact assessment) laws.
- Delineate the objectives and enforcement responsibilities of the Department of Environment and the regional basin agencies.
- Raise the priority of wastewater management and develop an action plan for an affordable and sustainable wastewater management system focusing on priority areas.
- Strengthen industrial pollution control capacities and the promotion of preventive activities.
- Review and complete the existing legal and regulatory framework with the objective of integrating the water quality dimension within the current water law.
- Develop an integrated monitoring program with the institutions responsible for water quality and provide sufficient resources to carry out the program.
- More widely disseminate information about water pollution, water quality and clean technologies beyond their current limited distribution to ministries and universities.